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Introduction to Chachapoyas Textile Catalogue.

Lena Bjerregaard.

This work contains the thorough analysis of forty-one of the best-preserved textiles from the mummy find at Laguna de los Condores (1997). The textiles are now all in the Leymebamba Museum, either in storage or on exhibition. The textiles were partly found loose in the chullpas, partly as part of a mummy - either as inner or outer wrapping or for instance tucked under the chin of the deceased to keep the head in place.

Conditions:

All the textiles analyzed were in surprisingly good condition - after about 500 years in the rainforest all "normal" organic material would have been consumed by fungi and bacteria. What are the "unnatural" conditions permitting these mummies and textiles to survive for so long? Were the burial conditions very dry and stable, or were the mummies treated with some poison that kept fungi and animals away?

The chullpas are built high up on a cliff wall and were in former times concealed behind a waterfall. Some time back an earthquake has changed the waterfall and destroyed the roof of the chullpas. It is therefore no longer possible to measure the original humidity inside the chullpas, and the measurements that have been carried out over the last years, have shown a changing humidity between 100 and 0% RH. If it is not the dry conditions that have saved the mummies, it must be the treatment.

The mummies are mummified - i.e. their intestines have been taken out after death, and a plug of raw cotton inserted in the rectum. This is very unusual in pre-Colombian Peru, which along the coast (where so far most mummy finds have been made) has a very dry climate that allows deceased bodies to dry out naturally. The chemical substances that was used in the mummification process could be either of inorganic or of organic origin; i.e. if inorganic most likely lead, mercury, copper or arsenic, and if organic from some kind of plant-poison. Unfortunately the tests (SEM (Scanning electron microscope) and XRF (X-ray fluorescence)) that were made to search for inorganic material did not give any results, and so far it has not been possible for economic reasons to make thorough search (gas chromatographic tests for instance). However bioassay tests for presence of compound with antimicrobial activity showed that an antimicrobial compound is found in a leather sample from the find. No sign of antimicrobial compound could be found however on the textile samples.

The textile materials are cotton, wool, plant fiber, and human hair. The protein fibers are much more brittle than the vegetable fibers, which could point to alkaline conditions. However pH tests with a micro electrode in a controlled aqueous solution, showed that this was not the case - all the tested fibers (10 pieces) had a pH between 5 and 6 - the protein fibers being a little more acid than the vegetable fibers. Dr. Sonia Guillen is proceeding with the research on the mummified bodies.

The objects.

A thorough analysis was done on 41 of the textiles, representing a wide spectrum of objects and techniques. The textiles were: 10 tunics (uncus), 4 mantas (cloth/shawl - one

probably a woman's wrap-around dress), 10 bags, 7 bands, 2 head-bands, 3 nets, 1 hat, 1 tupu cord, 1 interwoven sticks, 1 sling and 1 whip. The techniques used for creating these textiles are:

weaving (tunics, mantels, bands, bags),
looping (bags, hat),
braiding (sling, whip, net),
knotting (nets),
wrapped cord (tupu string)
pile with peruke stitch (head-bands).

The different kinds of weavings are:

Balanced plain weave (mainly 2/1 - though also 1/1 and 2/2 occurs). Cotton, mainly S spun.

Warp faced plain weave, wool, mainly 2S, cotton S.

Complimentary warp weave (wool, 2S)

Supplementary, floating weave (cotton S).

Tapestry (cotton warp, woolen weft).

Brocade (single face, pos./negative and double face).

Tube weave (with complimentary warp designs).

Other decorating techniques are:

Embroidery (running stitch (double faced), chain stitch and stem stitch.

Tie-dye.

Tassels.

Decorating edges:

Woven bands (0,5-7 mm, where the weft while weaving is sewn into the textile selvage). This edging is often used on the bottom of the uncus. Stem stitch embroidery (soumack) over spiraling foundation yarn. Loop stitch embroidery; often-used edging arm and neck holes on uncus. 8 shaped stitching, joining two textiles on uncus and mantas.

Inca/Chachapoyas.

The textiles are partly Inca (or provincial Inca) and partly Chachapoya; partly mixed.

The major part of the plain-woven cotton textiles is 2/1 tabby in S spun yarns. Also a few plain-woven textiles of 2/2 or 1/1 are present. The 2/1 tabbies are not very common in Peru, and were mainly found on the north coast ("Lords of Chimor", Ann Rowe, 1984).

The shape of the tunics is Inca - longer than they are wide. Tunic no. INC 111 is woven on an upright loom with a (when on) horizontal warp. It is in tapestry with a woolen weft and has the pattern units arranged in a step pattern - all very Inca style - but the designs of the pattern units are completely Chachapoyan (feline heads in profile and human heads "en face"). The tube woven complimentary warp chuspa straps and the warp-striped chuspas are completely Inca, but some (2) of the bags are in tapestry weaving with a very Chachapoyan design of an anthropomorphic figure with a plumed headdress (or maybe it is his hairs standing up from fright?).

A very local kind of weaving has striped cotton warp and weft with floating supplementary warps that are sometimes discontinuous. These warp striped cotton weavings with floating warps (although not discontinuous and not very frequent) are still being made in the area. The archaeological Chachapoya weavings with floating warps have a variety of colors, not seen on cotton in the Inca textiles; especially an orange and yellowish ochre that are rather unique for the area (see below for dye analyses). I therefore believe that the cotton yarns were locally dyed.

The woolen yarns used in the archaeological textiles are all 2S, like all over the Andean world. The cotton yarns are mainly S, which could point to the fact, that the cottons were also locally spun, opposed to the woolen yarns that could have been imported into the area from spinning and dyeing centers in the highlands.

The textiles present a variety of iconographies - from the strictly geometrical Inca patterns to the pure Chachapoyan designs of felines in profile, human heads en face and whole anthropomorphic figures with upraised arms. These designs are repeated over and over again using different pattern techniques.

Many of the uncus are made with discontinuous warps, so that they come out striped or checked. All except one (INC 111) has a cotton foundation. A very unusual thing about these textiles is that many of them are cut, folded and sewn along a warp end (CMA 2082 along a weft side). Supposedly this finishing of a textile was not permitted by the Incas, who favored the much more tedious way of finishing the weavings by weaving all through the warp and ending up with a textile with 4 selvages. So for some reason the influence of the Inca laws were not so strong in Chachapoyas around the time, when these textiles were produced. Chachapoyas was conquered by the Inca as late as 1475, and some of the Leymebamba mummies are Inca officials (orejones), so probably the Inca influence was as strong as everywhere else as long as it lasted. Another possibility could be, that these particular textiles are colonial - made between 1534 and 1576, where the missionaries reached Chachapoyas and forbade the traditional burial customs.

The colors.

Analyses of some of the dyes of the Leymebamba textiles are done by Mr. Unger at the Ratgen Forschungs Labor in Berlin, by means of HPLC (High-performance liquid chromatography). This work is still in progress, and looks very interesting and promising.

The HCPL and XFR tests were done by the Ratgen Forschungs Labor, Berlin.

The SEM by the School of Conservation, Copenhagen.

The Bioassay tests by Novoenzymes, Copenhagen.